UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,311	07/30/2003	Marc A. Viredaz	200208136-1	3682

			EXAMINER
22879	7590	03/25/2005	WALLING, MEAGAN S

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ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/632,311	VIREDAZ ET AL.
	Examiner	Art Unit	
	Meagan S. Walling	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*22 December 2004*</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-12,14-19,21-24 and 26-28* is/are rejected.

7)☒ Claim(s) *7,13,20,25 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20050315

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1.   Claims 1-6, 8-12, 14-19, 21-24, and 26-28 are rejected under 35 U.S.C. 102(e) as being

anticipated by Friedrich et al. (US 2003/0193777).

The applied reference has a common assignee with the instant application. Based upon

the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37

CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

inventor of this application and is thus not the invention "by another," or by an appropriate

showing under 37 CFR 1.131.

Regarding claim 1, Friedrich et al. teaches determining a workload within a data center

(par. 32); determining an amount of heat being generated as a function of the workload (par. 32);

and activating each of a plurality of different types of cooling resources within the data center in

an optimal fashion based on the heat being generated (par. 33).

Regarding claim 2, Friedrich et al. teaches that the optimal fashion is based on a cost

associated with the activation of each of the plurality of different cooling resources (par. 33).

Regarding claim 3, Friedrich et al. teaches deactivating one or more of the activated plurality of different types of cooling resources within the data center based on a reduction in the amount of power being consumed by the workload (par. 35).

Regarding claim 4, Friedrich et al. teaches that the amount of heat being generated is a function of an amount of power being consumed by the data center (par. 5).

Regarding claim 5, Friedrich et al. teaches that the cooling resources has a cooling capability wherein the cooling capability is a function of an amount of heat that can be removed by the cooling resource and the act of activating each of a plurality of different cooling resources in an optimal fashion further comprises; activating each of a plurality of different cooling resources based on the amount of heat that can be removed by each of the plurality of cooling resources (par. 35).

Regarding claim 6, Friedrich et al. teaches that the plurality of cooling resources comprises an air-based cooling resource, a liquid-based cooling resource, and a gas-based cooling resource (par. 5).

Regarding claim 8, Friedrich et al. teaches means for determining a workload within a data center (par. 32); means for determining an amount of heat being generated as a function of the workload (par. 32); and means for activating each of a plurality of different types of cooling resources within the data center in an optimal fashion based on the heat being generated (par. 33).

Regarding claim 9, Friedrich et al. teaches means for deactivating one or more of the activated plurality of different types of cooling resources within the data center based on a reduction in the amount of heat being generated (par. 35).

Regarding claim 10, Friedrich et al. teaches that the amount of heat being generated is a

function of an amount of power being consumed by the data center (par. 5).

Regarding claim 11, Friedrich et al. teaches that the cooling resources has a cooling

capability wherein the cooling capability is a function of an amount of heat that can be removed

by the cooling resource and the means for activating each of a plurality of different cooling

resources in an optimal fashion further comprises; means for activating each of a plurality of

different cooling resources based on the amount of heat that can be removed by each of the

plurality of cooling resources (par. 35).

Regarding claim 12, Friedrich et al. teaches that the plurality of cooling resources

comprises an air-based cooling resource, a liquid-based cooling resource, and a gas-based

cooling resource (par. 5).

Regarding claim 14, Friedrich et al. teaches a global computer system (par. 14); a

plurality of different cooling resources coupled to the global computer system (Ref. 115); a

cooling resource control module coupled to the global computer system and the plurality of

different cooling resources (Ref. 130) wherein the cooling resource control module includes

logic for: determining a workload within the global computer system (par. 32); determining an

amount of heat being generated as a function of the workload (par. 32); and activating each of a

plurality of different types of cooling resources coupled to the global computer system in an

optimal fashion based on the amount of heat being generated (par. 33).

Regarding claim 15, Friedrich et al. teaches that the optimal fashion is based on a cost

associated with the activation of each of the plurality of different cooling resources (par. 33).

Regarding claim 16, Friedrich et al. teaches deactivating one or more of the activated plurality of different types of cooling resources within the data center based on a reduction in the amount of heat being generated (par. 35).

Regarding claim 17, Friedrich et al. teaches that an amount of heat being dissipated by the global computer system is a function of an amount of power being consumed by the global computer system (par. 5).

Regarding claim 18, Friedrich et al. teaches that the plurality of cooling resources has a cooling capability wherein the cooling capability is a function of an amount of heat that can be removed by the cooling resource and the act of activating each of a plurality of different cooling resources in an optimal fashion further comprises; activating each of a plurality of different cooling resources based on the amount of heat that can be removed by each of the plurality of cooling resources (par. 35).

Regarding claim 19, Friedrich et al. teaches that the plurality of cooling resources comprises an air-based cooling resource, a liquid-based cooling resource, and a gas-based cooling resource (par. 5).

Regarding claim 21, Friedrich et al. teaches determining a workload within a global computer system (par. 32); determining an amount of heat being generated as a function of the workload (par. 32); and activating each of a plurality of different types of cooling resources coupled to the global computer system in an optimal fashion based on the amount of heat being generated (par. 33).

Regarding claim 22, Friedrich et al. teaches that the optimal fashion is based on a cost associated with the activation of each of the plurality of different cooling resources (par. 33).

Regarding claim 23, Friedrich et al. teaches deactivating one or more of the activated plurality of different types of cooling resources within the data center based on a reduction in the amount of heat being generated (par. 35).

Regarding claim 24, Friedrich et al. teaches that the plurality of cooling resources comprises an air-based resource, a liquid-based cooling resource, and a gas-based cooling resource (par. 5).

Regarding claim 26, Friedrich et al. teaches determination logic for: determining a workload within a data center (par. 32); and determining an amount of heat being generated as a function of the workload (par. 32); and activation logic for activating each of a plurality of different types of cooling resources within the data center in an optimal fashion based on the amount of heat being generated (par. 33).

Regarding claim 27, Friedrich et al. teaches deactivating one or more of the activated plurality of different types of cooling resources within the data center based on a reduction in the amount of heat being generated (par. 35).

Regarding claim 28, Friedrich et al. teaches that the plurality of different types of cooling resources comprise an air-based cooling resource, a liquid-based cooling resource, and a gas-based cooling resource (par. 5).

Allowable Subject Matter

2.   Claims 7, 13, 20, 25, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the indication of allowability of claims 7, 13, 20, 25, and 29 is the inclusion of the limitations of activating and means for activating the air-based cooling resource before the liquid-based cooling resource and the gas-based cooling resource; and activating and means for activating the liquid-based cooling resource before the gas-based cooling resource. It is this limitation in the claimed combination that has not been found, taught, or suggested in the prior art that makes these claims allowable.

Response to Arguments

3.   Applicant's arguments with respect to claims 1-4, 6, 8-10, 21-24, and 26-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S. Walling whose telephone number is (571) 272-2283. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

msw

/John Barlow/
Supervisory Patent Examiner
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